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INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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S E C R E T

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COUNTRY	East Germany	REPORT	
SUBJECT	Heinrich Hertz Institute: 1956 Annual Short Report on Special Geomagnetic Questions Related to Ionospheric Phenomena	DATE DISTR.	1 MAY 1957
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SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE

"Investigation of Special Geomagnetic Questions Directly Related to Ionospheric Phenomena"

1. In continuing research work of 1955, theoretical research was undertaken on quantitative analysis of the geomagnetic solar eclipse effect.
2. The model of the ionosphere, on which the theory is based, was expanded to such an extent through the introduction of empirical functions that a quantitative comparison with measured data was made possible. The influence of the magnetic field of current induced in the internal part of the earth (Erdinner) was discussed, and the effects of such smaller effects as self-induction of the ionospheric eddy current (Stromwirbel) and ellipticalness of the shadow were estimated (abgeschaetzt).
3. By taking these influences into consideration, it is possible to determine during a solar eclipse the height and direction of current-bearing ionospheric layers by means of magnetic measurements. The evaluation of one measurement already made sets the height of the S_q current at 100 to 200 kilometers.
4. A Foerster sonde for recording micro-pulsations of the three geomagnetic components was designed and preliminary work on it begun. The Foerster sonde was planned for use during the International Geophysical Year.

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